



Complete Summary

GUIDELINE TITLE

Adapting your practice: treatment and recommendations for homeless patients with asthma.

BIBLIOGRAPHIC SOURCE(S)

Bonin E, Brammer S, Brehove T, Hale A, Hines L, Kline S, Kopydlowski MA, Misgen M, Obias ME, Olivet J, O'Sullivan A, Post P, Rabiner M, Reller C, Schulz B, Sherman P, Strehlow AJ, Yungman J. Adapting your practice: treatment and recommendations for homeless patients with asthma. Nashville (TN): Health Care for the Homeless Clinicians' Network, National Health Care for the Homeless Council, Inc.; 2003. 28 p. [11 references]

COMPLETE SUMMARY CONTENT

SCOPE

METHODOLOGY - including Rating Scheme and Cost Analysis

RECOMMENDATIONS

EVIDENCE SUPPORTING THE RECOMMENDATIONS

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

QUALIFYING STATEMENTS

IMPLEMENTATION OF THE GUIDELINE

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT

CATEGORIES

IDENTIFYING INFORMATION AND AVAILABILITY

SCOPE

DISEASE/CONDITION(S)

Asthma in homeless patients:

- Adult asthma
- Pediatric asthma

GUIDELINE CATEGORY

Diagnosis

Evaluation

Management

Prevention

Treatment

CLINICAL SPECIALTY

Allergy and Immunology
Emergency Medicine
Family Practice
Internal Medicine
Pediatrics
Pulmonary Medicine

INTENDED USERS

Advanced Practice Nurses
Emergency Medical Technicians/Paramedics
Health Care Providers
Nurses
Physician Assistants
Physicians
Psychologists/Non-physician Behavioral Health Clinicians
Public Health Departments
Respiratory Care Practitioners
Social Workers
Students
Substance Use Disorders Treatment Providers

GUIDELINE OBJECTIVE(S)

To recommend adaptations in standard clinical practices to foster better health outcomes for homeless adults and children with asthma

TARGET POPULATION

Homeless adults and children with asthma

INTERVENTIONS AND PRACTICES CONSIDERED

Note: Refer to the "Major Recommendations" field for context.

Adult Asthma

Diagnosis/Evaluation

1. History including living conditions, working conditions, symptoms and functional impairment, prior diagnosis and treatment; use of inhaled substances (if applicable); treatment during incarceration (if applicable); medical/mental health history, prior providers and health insurance; assessment of literacy, reliability of reported diagnoses, and complexity of co-morbid conditions
2. Physical examination, including forced expiration, evidence of other pulmonary disease, use of peak flow meter to assess lung function, nasal findings, mental health status
3. Diagnostic tests, including spirometry, chest x-ray, tuberculin test (purified protein derivative [PPD]), human immunodeficiency virus (HIV) test, and serology or sputum cultures

Management/Treatment

1. Education and self management, including use of inhalers, spacers, and nebulizers; cleaning nebulizers and spacers; education about smoking and factors that trigger asthma; establishment of treatment goals and an asthma action plan; and exploration of potential barriers to treatment adherence
2. Medications, such as inhaled corticosteroids (controllers), short-acting beta-agonists, long-acting beta-agonists, influenzae and pneumococcal vaccines; prescribing simple medical regimens; discouraging the use of over-the-counter inhalers
3. Assisting patients by providing medication on site and applying for Medicaid and other programs for prescription drug coverage
4. Recognizing and managing associated problems/complications for which homeless people are at increased risk related to medications, access to care, functional limitations, communication barriers, and multiple comorbidities
5. Follow-up including documentation of patient contact information; exploration of potential barriers to treatment adherence and follow-up care; outreach/case management; collaboration with shelter providers to facilitate "rescue" care and medication storage

Pediatric Asthma

Diagnosis/Evaluation

1. Medical and social history, including housing and medical home, environmental assessment, symptoms and allergies, exposure to viral upper respiratory tract infections (URIs), family access to entitlements, special needs, continuity of care, medical history, emergency room (ER) visits, low birth weight (LBW)/prematurity, family health/stress, and nutrition
2. Physical examination, including eyes, lungs, skin, and general exam
3. Diagnostic tests, such as spirometry, measure of lung function with peak flow meters, and allergy testing

Management/Treatment

1. Education and self-management including educating patients/parents and service providers about environmental conditions that exacerbate symptoms, proper equipment use, cleaning nebulizers/spacers, prevention, and ER visits; providing appropriate educational material, log books, written action plans; relieving familial stress; and extending clinic hours
2. Medications including anti-inflammatories, inhalers, spacers, nebulizers, immunizations; assessing medication efficacy, storage, and refill rate
3. Recognizing associated problems/complications including uncoordinated care, financial barriers, educational delays associated with poor asthma control, inappropriately restricted physical activity, and familial stress
4. Follow-up, including encouraging family to find a "medical home," documenting patient contact information, outreach and case management

MAJOR OUTCOMES CONSIDERED

- Emergency care use
- Symptom control (e.g. number of symptom-free days)

- Severity/frequency of exacerbations
- Health disparities between homeless and general U.S. populations

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
 Hand-searches of Published Literature (Secondary Sources)
 Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Searches of MEDLINE, SocABS, PsycInfo databases were performed.
 Bibliographies compiled by the Bureau of Primary Health Care's Homeless Information Resources Center were also searched.

NUMBER OF SOURCE DOCUMENTS

This guideline is adapted from two primary sources.

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The Network Steering Committee and other primary health care providers, representing Health Care for the Homeless (HCH) projects across the United States, devoted several months during 2002-03 to developing special recommendations for the care of asthma patients who lack stable housing. These

recommendations reflect their collective experience in serving homeless people with asthma.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Clinical Validation-Pilot Testing
External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The guideline developer's Advisory Committee identifies, in the original guideline document, the clinicians who reviewed and commented on the draft recommendations prior to publication, including experienced Health Care for the Homeless practitioners and medical experts in asthma care. The guideline was field tested by clinicians in designated Health Care for the Homeless projects during the summer of 2003. Evaluation criteria included clarity, flexibility and ease of use; relevance to the care of homeless clients or those at risk of becoming homeless; inclusion of strategies to promote outreach and case management and ensure follow-up; sufficiently detailed to ensure that similar practitioners would offer similar treatment in the same circumstances; and sufficiently complete to enable new clinicians to use them for homeless clients. Evaluators found that the guideline met all of these criteria and recommended future development of "short forms" of this and other adapted clinical guidelines to facilitate use in a variety of clinical settings.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Adult Asthma

Diagnosis and Evaluation

History

- Living conditions. Ask patient to describe the place where he or she sleeps. Many homeless people live in environments with allergens that trigger asthma exacerbations (mold, dust mites, cockroach feces, animal dander, air pollution). Ask where patient stores belongings, medications, and inhalers. If living in a shelter, ask about rules for medication use/storage.

- Working conditions. Ask where patient works; inquire about occupational exposures that may contribute to asthma (e.g., sweeping, cleaning jobs, exposure to cleaning solvents, insecticides, herbicides, or diesel fumes). Ask what chores the patient is required to do in shelters that might aggravate asthma.
- Symptoms. Ask patient what causes symptoms, what makes them worse, whether treatment seems to be effective, and if current living situation seems to affect symptoms. Ask if patient is awakened by a dry cough at night (frequently overlooked symptom). If patient is using inhalers, ask about frequency of use.
- Functional impairment. Ask specific questions to determine patient's activity level and relationship of activity to symptoms. Ask if patient does anything strenuous. Ask if symptoms interfere with activities requiring physical exertion. Homeless people have to walk a lot and typically do jobs that require physical activity.
- Prior diagnosis, treatment. Ask if/when patient was diagnosed with asthma. Ask how many emergency room visits, prior hospitalizations, and whether ever intubated. Ask about adherence to prior treatment. (Patients may say they have asthma when in fact their symptoms are related to chronic obstructive pulmonary disease [COPD] or emphysema secondary to smoking.)
- Inhaled substances. Ask patient to specify any inhaled substances, such as tobacco, marijuana, crack, glue, or Dilantin.
- Treatment during incarceration. Ask if patient has been incarcerated recently, and if so, whether asthma was treated during incarceration and if medications were returned to patient after release.
- Medical/mental health history. Do comprehensive assessment of patient's medical history, including cardiac and mental health status and history of gastroesophageal reflux disorder (GERD). Ask whether patient ever had tuberculosis or exposure to others with active tuberculosis. Ask when last tuberculin test (purified protein derivative [PPD]), chest x-ray, and human immunodeficiency virus (HIV) test were done. Ask about tuberculosis symptoms (prolonged cough, hemoptysis, fever, night sweats, weight loss), but realize that cough and weight loss occur frequently among homeless persons for other reasons.
- Prior providers. Inquire about other health care providers the patient has seen. Recognizing the mobility of this population, try to assess likelihood that patient will stay in one place long enough to work on better asthma control.
- Health insurance. Ask whether patient has health insurance that covers prescriptions. Majority of homeless adults are uninsured or have insurance that does not pay for medications. This can present a serious barrier to treatment. Provide assistance in applying for Medicaid and other entitlements for which patient may be eligible.
- Literacy. Assess patient's literacy level and ability to read instructions. Patients who are illiterate may not volunteer this information. (Patient may speak but not read English while being literate in Spanish, for example.)
- Reliability. Assess reliability of information provided by patient. (Inhalers or other medications can be sold or traded; this may provide an incentive for some individuals to report having a condition not actually diagnosed.)
- Complexity. Acuity, multiplicity of health conditions, and sporadic follow-up are problems seen in homeless patients that make good history taking and prioritizing treatment goals especially difficult.

Physical Examination

- Forced expiration to detect wheezing at base of lung; take sufficient time for observation to assure accuracy and reproducibility of exam.
- Other pulmonary disease. Look for clubbed fingers as evidence of pulmonary disease other than asthma.
- Peak Flow Meter (PFM). Use in clinic to assess lung function and document improvement. Dispense for self-care sparingly (e.g., for patients with problems at night or for those who are highly motivated to work on asthma control). Peak flow meters are often difficult to store, easily lost, expensive, and require high motivation to be an effective self-monitoring tool. Documenting results can be impractical for many homeless persons.
- Nasal findings or chronic sinusitis (possibly secondary to drug inhalation) may contribute to symptom complex and make symptom control more difficult.
- Mental health status. Assess for possible cognitive deficit secondary to substance abuse/mental illness that might complicate treatment adherence. Be familiar with signs and symptoms of substance abuse/addiction and short- and long-term effects of psychoactive substances. (See www.nida.nih.gov/Drugpages/DSR.html.)

Diagnostic Tests

- Spirometry, chest x-ray. Access to these tests is problematic for many homeless patients who have difficulty finding transportation, lack health insurance, and are unable to pay for tests. Spirometry to measure forced expiratory volume in one second (FEV1) is preferred. When access to spirometry is limited, provider must rely on history, physical exam, and percent predicted of peak flow for diagnosis.
- Purified protein derivative (PPD). Screen for tuberculosis in patient with a chronic cough, especially if HIV positive. Negative tuberculin test (PPD) does not rule out tuberculosis if there are symptoms; seek chest x-ray when symptomatic.
- HIV test
- Serologies or sputum cultures to rule out other respiratory infections that cause chronic cough. Be alert to common infectious respiratory diseases in your region and in region(s) where patient has been (e.g., histoplasmosis in the Midwest, coccidiomycosis in the Southwest and California). Homeless people may travel from region to region and may have recently come from an area where one of these diseases is endemic.

Plan and Management

Education, Self-Management

- Inhaler use. Ask patient to demonstrate use of inhaler; if patient is using it incorrectly, demonstrate correct use. Using street terminology to explain the correct method may be helpful in getting patient to inspire medication effectively (e.g., if patient smokes marijuana or cocaine, compare inhaler use to "taking a big hit off a joint or crack pipe.") Use creative ways to identify different types of inhalers appropriate to patient's literacy level (e.g., use color coding; put medication label on device, not box).
- Spacers. Many patients don't like or use spacers (bulky, breakable). Seek alternative medication delivery modalities. Toilet paper rolls, blue respiratory

tubing cut in six-inch pieces, and plastic water bottles can be used as substitutes for manufactured spacers.

- Nebulizers. Although spacers, used properly with inhalers, provide excellent medication delivery, there are some patients who will require nebulizers for symptom relief. Work with shelter staff and other homeless service providers to provide a place for nebulizers to be used and stored.
- Cleaning nebulizers & spacers. Teach patient how to cleanse nebulizers and spacers properly: take nebulizers and spacers apart, rinse in solution (vinegar and water, in equal proportions) and dry; don't just leave on the floor. Give patient a bottle of vinegar or make it available in shelters; homeless persons may have difficulty obtaining it on their own.
- Smoking. Acknowledge that smoking cessation may be a low priority for homeless people, given their many problems, but stress importance of reducing nicotine use. Use harm reduction approach (e.g., encourage patient to reduce number of cigarettes smoked daily).
- Educate shelter staff about factors that trigger asthma symptoms; encourage them to decrease allergens in living facilities, limit patient's exposure to dust and cleaning solutions, and provide no-smoking areas in shelters.
- Patient goals. Encourage patient to select own treatment goals, even if they differ from providers or are prioritized differently.
- Asthma action plan. Ask every patient what he/she would do if an asthma attack does not respond to "rescue" Albuterol. Provide guidance, preferably written, in language patient can understand.
- Standard questions. At the end of every clinic visit, ask patient, "Is there anything we talked about today that is unclear? Is there anything in the plan of care that will be difficult for you?"

Medications

- Choice of Rx. Use simplest medical regimen possible to facilitate adherence to treatment. Use whatever medications are appropriate and available to patient, considering medication expense and duration of treatment.
- "Controllers,". There is strong evidence that inhaled corticosteroids improve long-term outcomes for persons with asthma (National Asthma Education and Prevention Program [NAEPP], 2002). Nevertheless, these anti-inflammatories are frequently underprescribed by practitioners and underused by patients. Conscientiously prescribe controller medications according to standard clinical guidelines (NAEPP, 1997, 2002), recognizing that homeless patients are at especially high risk for inappropriate or insufficient preventive treatment and may rely unnecessarily on acute care as a result. Provider must educate patient about importance of preventative rather than crisis management of asthma.
- Short-acting beta-agonists. Because of their immediate effect, short-acting beta-agonists are the most popular medications for symptom relief; however, there is increasing evidence that with regular use, they may actually make asthma worse. Homeless providers should recognize potential for inhalers to be abused, both because they relieve symptoms quickly, and because of their street value. Use creative ways to monitor number of inhalers used while optimizing symptom control. Offer alternative forms of treatment (e.g., nebulizer or oral drugs in lieu of inhalers) for patients who are abusing short-acting beta-agonists.

- Long-acting beta-agonists. Be cautious about prescribing long-acting beta-agonists because of the danger of overuse. This can happen inadvertently if multiple inhalers are confused. Be sure that patient understands not to use this inhaler for "rescue."
- On-site provision. Dispensing medications on site is more effective than sending homeless patients to the pharmacy with a prescription.
- Over the counter (OTC) inhalers are potentially dangerous and ineffective; discourage their use.
- Medication storage. Recognize that many of the newer controller medicines are dry powders that need to be stored in a cool, dry place. This may be a barrier to their use for some homeless people.
- Flu Vaccine. Influenzae and pneumococcal disease can exacerbate asthma. Homeless people with asthma are especially vulnerable to these diseases, given their high risk for exposure to respiratory infections in congregate living situations. All asthma patients should receive influenzae vaccine annually and be immunized against pneumococcus according to standard clinical guidelines.
- Prescription drug coverage. Provide assistance in applying for Medicaid and other programs for which patient is likely to be eligible that cover prescription drugs or help to defray their cost.

Associated Problems/Complications

- Lost, stolen, abused medications. Bronchodilators and spacers are frequently lost or stolen. Albuterol is valuable on the street for getting a better "high" when smoking crack cocaine.
- Financial barriers. If patient does not have prescription drug coverage and is ineligible for Medicaid or other public assistance, consider use of pharmaceutical companies' Patient Assistance Programs for low-income individuals, and/or US Department of Health and Human Services' 340B Pharmaceutical Discount program, if eligible (<http://bphc.hrsa.gov/opa/howto.htm>). Free medication samples can also be used, recognizing difficulty that sometimes occurs in obtaining medication for continued use.
- Transience of homeless people compromises continuity of care and makes good, routine management of asthma less likely than episodic, crisis care.
- Physical & mental limitations may complicate treatment. Cognitive deficits secondary to substance abuse or mental illness may affect patient's understanding of disease process and adherence to treatment.
- Literacy/language barriers. Some homeless people can't read. Patient education materials may not be written at an appropriate literacy level or in the person's first language.
- Tuberculosis risk. Symptoms of tuberculosis (TB) may not be recognized immediately in an asthmatic patient with a chronic cough. Providers should have a high index of suspicion for tuberculosis, particularly when the patient has HIV infection. In a patient with suspected TB infection, congregate living settings must be avoided until active disease is ruled out.
- Gastroesophageal reflux disorder. Recognize that co-occurring gastroesophageal reflux disorder triggers asthma exacerbations. Provide treatment for gastroesophageal reflux disorder and suggest ways to alter diet to help alleviate problem. This is especially challenging for homeless patients,

- who have limited access to a healthy diet and little option to change their sleeping position.
- Misdiagnosis. Homeless people may have comorbidities such as chronic bronchitis, emphysema, and/or tuberculosis that mimic asthma symptoms. Correct diagnosis of asthma is essential.
 - Transportation. Homeless patients may be unable to return to clinic because of lack of funds for transportation.

Follow-Up

- Contact information. At every visit, ask where patient is staying and how he or she can be contacted (e.g., address, phone/cell phone number(s), e-mail address, emergency contact(s), case manager's name and number, shelter phone number). If sleeping outdoors or in a vehicle, find out where outreach workers may be able to locate patient.
- Regular follow-up is recommended for homeless patients, but many tend to return only during crises or exacerbations. Explore barriers to follow-up with patient. Explain importance of routine follow-up to prevent future crises.
- Outreach/case management. Include medications adherence in case management plan. Coordinate plan of care with outreach workers, social workers, and case managers to increase patient adherence to treatment and promote better follow-up care.
- Shelters. Establish rapport with shelter staff to facilitate rescue care; ask them to store nebulizers and remind clients to take medications. (Assure shelters that this is not the same as "dispensing" medications.) Urge shelters to provide smoke-free spaces, use allergen-impermeable mattress covers, launder bedding weekly in hot water over 140 degrees F, repair dripping faucets, and keep humidity below 50% to reduce proliferation of vermin and molds.
- Medication control. Ask patients to return, even for brief follow-up, before their inhaler runs out; this may minimize inhaler abuse that occurs with multiple authorized refills.

Pediatric Asthma

Diagnosis and Evaluation

History

- Housing & medical home. Ask specific questions to determine whether the family is homeless. ("Where do you live? Who lives where you live? How long have you lived there? Where did you live before?") At every visit, document patient's housing status and living conditions, list barriers to consistent treatment, and ask if child has a "medical home" (regular source of primary care). Ask whether access to this primary care provider is limited (e.g., by a change in health insurance, lack of transportation). Ask these questions in several different ways to elicit desired information.
- Environment. Clearly document environmental factors that may trigger or exacerbate patient's asthma. Ask family about mold, dust, cockroaches, and proximity to tunnels and busy highways in the place where they live. (If in a shelter, ask what kind. Basement shelters have more mold.) Ask whether any member of "household" smokes cigarettes, marijuana, crack cocaine or other

substances, to assess patient's exposure to secondary smoke. Ask whether there is somewhere they can plug in a nebulizer. If patient has been seen before, ascertain whether environmental conditions have improved or deteriorated.

- Symptoms & allergies. Document frequency and severity of asthma symptoms and any known allergies. Ask about nocturnal coughing and sleep interruption (of patient/family). Ask patient/parent to describe the cough (whistling, wheezing, loss of breath), and inquire about missed school days.
- Viral upper respiratory infections (URIs). Viral upper respiratory infections, common among young children, are the most common trigger of asthma exacerbations, and can cause wheezing independently of asthma. Ask if patient is in daycare and whether he/she spends time near other children who are sick.
- Entitlements. Explore child's or family's access to entitlements including Medicaid, State Children's Health Insurance Program (SCHIP), or Supplemental Security Income (SSI), to determine possible eligibility for health insurance and financial assistance with permanent housing. (In many states, most homeless children are eligible for Medicaid or SCHIP.) Ask how family obtains medicine.
- Special needs. Assess the special needs of each client, including possible developmental delays.
- Continuity of care. Ask who has provided medical care for child in the past; advise parents to choose one primary care provider. Try to allay confusion about different drugs prescribed or different information conveyed by different providers.
- Medical history. Try to locate medical records quickly, but don't wait for them to be found; aggressively inquire about patient's medical history, including current medication use, dosage and interval, previous hospitalizations, intensive care stays, and intubations. Also include immunization history.
- Emergency Room (ER) visits. Ask when they have occurred, at what time of day, and under what circumstances.
- Low birthweight/prematurity. Ask whether child was smaller than normal at birth or born prematurely. Low birthweight (LBW) is related to respiratory problems in infants. There is higher risk for low birthweight among homeless babies, in part because many homeless mothers smoke during pregnancy and many lack prenatal care.
- Family health/stress. Ask about other health or social problems of family members, and help parents to prioritize family's needs. Elicit information about social stress, which can exacerbate asthma, and relationship problems (including interpersonal violence). Chronic illness in a child increases that child's risk of abuse.
- Nutrition. Ask where the family gets food and what kinds of food the patient eats.

Physical Examination

- Eyes. If patient is on long-term oral steroids, ask when last ophthalmology exam was done. Be sure child is not lost to follow-up.
- Lungs. Lack of a wheeze does NOT indicate that child does not have asthma. Coughing is often the only sign of chronic asthma, especially if occurring while child is asleep. Assess for any signs of respiratory effort that may indicate

acute respiratory distress. If lungs are clear, counting respiratory rate (RR) is a good way to determine whether infant/child is in distress (breathing faster than 40 breaths per minute if under one year of age, or more than 30 breaths per minute if over one year of age). Retractions ("belly breathing") are also a sign of distress.

- Skin. If child has dermatitis or eczema, don't assume a long history of allergies; there may be other causes of asthma. Skin problems may indicate hygiene problems (limited access to bathing).
- General. Use every patient visit as an opportunity for a general physical examination, including height, weight, head circumference, and other screening recommended by standard clinical guidelines (e.g., American Academy of Pediatrics guidelines: www.aap.org/policy/paramtoc.html) and Early and Periodic Screening, Diagnosis and Treatment (EPSDT) services required for children on Medicaid (See: Early and Periodic Screening, Chapter 05, State Medicaid Manual: http://www.cms.hhs.gov/manuals/45_smm/pub45toc.asp). Balance comprehensive care with meeting child's acute needs.

Diagnostic Tests

- Spirometry is very important to assess lung obstruction and reversibility of patient's condition. If your clinic cannot afford a spirometer, collaborate with another clinic that has one. With homeless children, treat and continue to treat until spirometry is available; don't wait. Lack of access to spirometry or a pulmonologist should not preclude treatment. If available, do spirometry at initial visit; don't delay until a follow-up visit.
- Peak flow meters can provide reliable measures of lung function only when used routinely.
- Allergy testing should be considered when testing and intervention are available to identify environmental factors that exacerbate asthma severity and help parents identify allergens that worsen their child's condition. Recognize that homeless families don't have as much control over their environment as others do. The high rate of asthma in homeless children is thought to be related, in part, to the presence of mold, animal dander, dust, cockroaches, and smoke in shelters or other living situations.

Plan and Management

Education/Self-Management

- Living conditions. Explain to parent how living conditions, especially active or passive smoking, will make asthma worse. Incidence of smoking among homeless people is higher than in the general population. Suggest ways to minimize child's exposure to passive smoking; encourage smoking cessation or smoking out of doors. Explain that cockroach feces are a common trigger of asthma symptoms. Advise moving patient's pillow to end of bed not adjacent to a wall, where cockroaches are more likely to be.
- Symptoms. Educate parent about signs and symptoms of asthma exacerbation (e.g., night-time/early morning cough, posttussive emesis, shortness of breath [only able to talk in short sentences], wheezing). Audible wheezing is a late sign. Teach child how to recognize his/her own symptoms.

- Proper equipment use. Teach patient/parent how to use metered dose inhaler (MDI)/spacer, nebulizer with face mask for an infant or younger child: Give client an index card or a sticker to put on pump with directions for use. Document training and demonstration of correct use of inhalers and spacers. Have replacement filters for nebulizer available.
- Cleaning nebulizers/spacers. Teach parents how to cleanse nebulizers and spacers properly: take nebulizers and spacers apart, rinse in solution (vinegar and water, in equal proportions) and dry; don't just leave on the floor. Give parent a bottle of vinegar or make it available in shelters; homeless families may have difficulty obtaining it on their own.
- Educational materials. Make sure parent or patient can read and understand any written materials you give them. Use existing resources for patient education materials (e.g., NAEPP, 1997, pp. 41–48) or develop your own.
- Education of service providers. Advocate for improvements in places where homeless children live, receive childcare, and go to school. Educate shelter staff about how they can control environmental conditions that exacerbate asthma – prohibit smoking in shelters, use allergen-impermeable mattress covers, wash sheets weekly in hot water over 140°F to kill dust mites, repair leaking faucets, maintain humidity below 50% to reduce proliferation of vermin and molds, and seal doors to keep out cockroaches, rodents, and other vermin. Educate staff at childcare centers and schools about how they can help children with asthma avoid exacerbations and cope with stresses associated with homelessness.
- Stress. Social or familial stress can exacerbate asthma and threaten family relationships. Use case management and other resources (e.g., childcare centers, schools) to support homeless families.
- Extended clinic hours. After-hours clinic time is essential to accommodate working parents who cannot take time off for clinic appointments without risking their jobs. Inform parents about after-hours clinic schedules.
- Written log. Consider asking parent to keep a log of child's asthma symptoms and what seems to make them worse. Some homeless parents keep written logs diligently; others do not. Give families a log book.
- Action plans. Written action plans can give patient or parents a sense of control. Most important is to educate them about the plan of care according to their individual needs and abilities.
- Prevention. Make parent aware of increased risks when a child with asthma is exposed to people who are sick. Explain that nasal discharge is extremely contagious. (Infectious organisms can survive up to six hours on nonporous surface.) Encourage frequent hand washing in congregate shelters and by caretakers of children to help prevent spread of upper respiratory infections. Do NOT recommend use of anti-bacterial soaps, which are thought to increase risk of bacterial resistance. Encourage coughing into crook of one's elbow rather than into one's hand to help decrease spread of certain cold viruses.
- ER visits. Instruct parent to contact patient's primary care provider, if possible, before taking child to the emergency department. Give family a phone number where they can reach a provider after-hours.
- Standard questions. At the end of every clinic visit, ask patient or parent, "Is there anything we talked about today that is unclear? Is there anything in the plan of care that will be difficult for you?"

Medications

- Anti-inflammatories. Providers should have a low threshold for prescribing anti-inflammatory medications for homeless children with asthma, who are at high risk for morbidity and mortality because of frequent exposure to upper respiratory infections, multiple environmental allergens, and difficulty adhering to routine treatment due to stressful conditions associated with homelessness. Strongly consider use of daily anti-inflammatories (oral and inhaled) as part of prophylactic care to keep child well.
- Inhalers. When prescribing anti-inflammatories and bronchodilators, select metered dose inhalers (MDIs) that can be used at same times of day with same number of inhalations for all medications prescribed. Make it simple. Consider reserving long-acting drugs for children with adequate and knowledgeable supervision of their medication administration. If longer-acting medications are used in older children and adolescents, potential for overuse must be assessed.
- Spacers. For improved delivery of MDIs, spacers can be made from one-liter soda bottles. (Using a knife, cut a cross into base of soda bottle and fit MDI snugly into base. When MDI is pressed, patient can breathe in medicine through opening at other end of bottle from which liquid is usually poured.)
- Nebulizers. Inquire about housing stability (overnight shelter? 24-hour shelter? about to be kicked out of all-day shelter?) and access to a facility where nebulizers can be plugged in. Identify resources to replace nebulizers that are lost. Use premixed solution bullets for nebulizer to minimize dosage errors and make storage and administration easier.
- Response to medications. Counting respiratory rate (number of breaths per minute) is a good way to assess child's response to medicines. A sustained decrease in respiratory rate, 15 minutes after treatment is given, indicates that aerosolized medicines are helping.
- Medication storage. Educate patient about safe storage of medications. If stored under patient's cot in a shelter, they are frequently stolen or may be shared/abused by other family members. Ask if shelter can store medications and make them immediately available to patient when needed. Explain that powdered medications should be stored in a cool, dry place.
- Medication refills. Assure that prescriptions are written with an adequate number of refills, if parent is able to get them filled at a local pharmacy, to prevent child from running out of medication. Monitor prescription refill rate to assure that medications are being used at proper intervals, not over/underutilized by an unsupervised child or adolescent, or shared/abused by other family members.
- Immunizations. Keep all immunizations up to date according to standard clinical guidelines. (Recommended childhood immunization schedule is available at: www.aafp.org/x7666.xml.) Ensure that homeless children are given Haemophilus influenzae type b (Hib) conjugate vaccine each fall. All healthy children under 24 months of age and children under 60 months of age with high risk conditions such as asthma (or other chronic pulmonary, cardiac or renal disease) should also receive the pneumococcal conjugate vaccine (PCV), especially if taking high-dose oral corticosteroid medications.

Associated Problems/Complications

- Eyes. Patients on oral steroids are at risk for ophthalmologic complications; regular evaluation is important.

- Uncoordinated care. Homeless children typically see many different providers and require a variety of medical and social services. For this reason, they need a "medical home," a regular primary care provider to coordinate their health care.
- Financial barriers. Most homeless children qualify for health insurance under Medicaid or SCHIP, which provide coverage for medications and supplies. Recognize that lack of health insurance and/or required co-payments for prescription drugs may make it difficult for homeless families to pay for medications. Provide assistance in applying for Medicaid/SCHIP; if patient is not eligible, consider use of pharmaceutical companies' Patient Assistance Programs for low-income individuals, and/or US Department of Health and Human Services' 340B Pharmaceutical Discount program, if eligible (<http://bphc.hrsa.gov/opa/howto.htm>). Free medication samples can also be used, recognizing difficulty that sometimes occurs in obtaining medication for continued use.
- Improper equipment use. Patients frequently use inhalers/spacers or nebulizers incorrectly, reducing medication effectiveness. Inhalers, spacers, peak flow meters, and nebulizers are easily lost, stolen, or damaged. Educate family about proper equipment use and practical alternatives to manufactured spacers; help arrange for safe storage of equipment and medications.
- Educational delays. Recognize that uncontrolled asthma frequently results in loss of sleep, fatigue that interferes with learning, missed school days, and educational setbacks for homeless children. Monitor school attendance and work with patient, family, and school to maintain good asthma control.
- Physical activity. Parents often try to limit activity of children with asthma. Explain that physical activity is important; if child is having difficulty, medications should be adjusted rather than limiting play and exercise.
- Familial stress. Social or familial stress can exacerbate asthma and threaten family relationships. A child with chronic illness presents another source of stress for a family already dealing with the highly stressful experience of homelessness. Help to alleviate stress by facilitating access to stable housing, supportive services, and other resources (e.g., through childcare centers and schools).

Follow-Up

- Frequency. Encourage parent to bring child back to clinic within 3 to 7 days following initial visit, and to bring all asthma medications to every visit.
- Medical home. Encourage every family to find a "medical home" for their child (i.e., one primary care provider to coordinate health care). Be active in following up with patient's regular primary care provider (PCP), if you are not that person, to communicate what has been done and facilitate continuity of care. Let primary care provider know that child is living in a shelter; tell family you will contact their regular provider to share this information.
- Entitlements. Work with social workers and case managers to pursue all entitlements for which family is eligible, including Medicaid, State Children's Health Insurance Program (SCHIP), Supplemental Security Income (SSI), Women, Infants, and Children (WIC) program, and food stamps. Explore options for permanent housing. Start with department of social services in your community or local health department. (Information about eligibility for various federally-funded programs is available at: <http://www.govbenefits.gov/govbenefits/index.jhtml>.)

- Mental health. Refer family to a mental health professional if there are psychological or social problems that may interfere with patient's adherence to the plan of care.
- Contact information. Document phone number of a relative or friend with a stable address who keeps in touch with patient's family. Ask if family has a cell phone; if so, record number. Be creative about how you maintain contact with the patient (e.g., through shelters, childcare centers, schools).
- School attendance. Document missed school days; coordinate services with patient's school.
- Outreach. Connect with homeless outreach programs, homeless health care providers, and your local homeless coalition or other advocates for underserved populations in your community. (For information about Health Care for the Homeless projects in your area, see: www.bphc.hrsa.gov/hchirc/.)

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

[References open in a new window](#)

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

This guideline was adapted from the following sources:

- National Asthma Education and Prevention Program (NAEPP)/National Heart, Lung & Blood Institute/NIH. Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma-Update on Selected Topics 2002: www.nhlbi.nih.gov/guidelines/asthma/index.htm.
- National Asthma Education and Prevention Program (NAEPP)/National Heart, Lung & Blood Institute/NIH. Expert Panel Report 2: Practical Guide for the Diagnosis and Management of Asthma. NIH Publication No. 97-4053, July 1997: www.nhlbi.nih.gov/health/prof/lung/asthma/practgde.htm.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Improved quality of asthma care and outcomes of that care in the homeless population

POTENTIAL HARMS

- Regular use of short-acting beta-agonists may actually make asthma worse.

- Long-acting beta-agonists may be overused by patients with co-occurring behavioral health disorders (who become confused when using multiple asthma inhalers).
- Albuterol can be misused to enhance the effects of crack cocaine.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

The information and opinions expressed in the guideline are those of the Advisory Committee for the Adaptation of Clinical Guidelines for Homeless Patients with asthma, not necessarily the views of the U.S. Department of Health and Human Services, the Health Resources and Services Administration, or the National Health Care for the Homeless Council, Inc.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

This guideline has been distributed to 161 Health Care for the Homeless (HCH) grantees across the United States and to several academic programs that train primary care practitioners. Twelve of these projects are participating in a Health Disparities Collaborative on Asthma. The HCH Clinicians' Network uses this venue to educate mainstream providers about the special needs of homeless patients. These and other recommended clinical practice adaptations to optimize care for homeless persons are also being used in workshops at national and regional conferences including the Health Disparities Collaborative Learning Sessions and the National HCH Conference sponsored by the Bureau of Primary Health Care/HRSA/HHS).

HCH projects use outcome measures recommended by the Health Disparities Collaborative on Asthma in which the HCH Clinicians' Network is a national partner (available at: www.healthdisparities.net/collaboratives_asthma.html).

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Bonin E, Brammer S, Brehove T, Hale A, Hines L, Kline S, Kopydlowski MA, Misgen M, Obias ME, Olivet J, O'Sullivan A, Post P, Rabiner M, Reller C, Schulz B, Sherman P, Strehlow AJ, Yungman J. Adapting your practice: treatment and recommendations for homeless patients with asthma. Nashville (TN): Health Care for the Homeless Clinicians' Network, National Health Care for the Homeless Council, Inc.; 2003. 28 p. [11 references]

ADAPTATION

This guideline was adapted from the following sources:

- National Asthma Education and Prevention Program (NAEPP)/National Heart, Lung & Blood Institute/NIH. Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma-Update on Selected Topics 2002: www.nhlbi.nih.gov/guidelines/asthma/index.htm.
- National Asthma Education and Prevention Program (NAEPP)/National Heart, Lung & Blood Institute/NIH. Expert Panel Report 2: Practical Guide for the Diagnosis and Management of Asthma. NIH Publication No. 97-4053, July 1997: www.nhlbi.nih.gov/health/prof/lung/asthma/practgde.htm.

DATE RELEASED

2003

GUIDELINE DEVELOPER(S)

Health Care for the Homeless (HCH) Clinician's Network - Medical Specialty Society
National Health Care for the Homeless Council, Inc. - Private Nonprofit Organization

SOURCE(S) OF FUNDING

The Bureau of Primary Health Care, Health Resources and Services Administration, U.S. Department of Health and Human Services

GUIDELINE COMMITTEE

Advisory Committee for the Adaptation of Clinical Guidelines for Homeless Patients with Asthma

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Committee Members: Edward Bonin, MN, FNP-C, RN, Tulane University Health Sciences Center, Adolescent Drop-In Health Services, New Orleans, Louisiana; Sharon Brammer, FNP, H.E. Savage Health Care for the Homeless, Mobile, Alabama; Theresa Brehove, MD, Venice Family Clinic, Venice, California; Abby Hale, PA-C, Homeless Healthcare Project, Community Health Center of Burlington, Burlington, Vermont; Lorna Hines, CMA, The Outreach Project, Primary Health Care, Inc., Des Moines, Iowa; Susan Kline, MN, ARNP, Public Health - Seattle and King County, Seattle, Washington; Mary Ann Kopydlowski, BSN, RN, Boston

Health Care for the Homeless Program, Jamaica Plain, Massachusetts; Mike Misgen, MA, LPC, Colorado Coalition for the Homeless, Stout Street Clinic, Denver, Colorado; Maria Elisa Obias, MSN, CNS, RN, Care Alliance, Cleveland, Ohio; Jeffrey Olivet, MA, Albuquerque Health Care for the Homeless, Inc., Albuquerque, New Mexico; Adele O'Sullivan, MD, Maricopa County Department of Public Health, Phoenix, Arizona; Mark Rabiner, MD, Saint Vincent's Hospital & Medical Center, New York, New York; Christine Reller, MSN, RN, Hennepin County Community Health Department, Health Care for the Homeless Project, Minneapolis, Minnesota; Betty Schulz, CPNP, RN, Mercy Children's Health Outreach Project, Baltimore, Maryland; Peter Sherman, MD, New York Children's Health Project, New York, New York; Aaron Strehlow, PhD, FNP-C, RN, UCLA School of Nursing Health Center at the Union Rescue Mission, Los Angeles, California; Jeffrey Yungman, MSW, Crisis Ministries' Health Care for the Homeless Project, Charleston, South Carolina

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

The Health Care for the Homeless (HCH) Clinicians' Network has a stated policy concerning conflict of interest. First, all transactions will be conducted in a manner to avoid any conflict of interest. Secondly, should situations arise where a Steering Committee member is involved in activities, practices or other acts which conflict with the interests of the Network and its Membership, the Steering Committee member is required to disclose such conflicts of interest, and excuse him or herself from particular decisions where such conflicts of interest exist.

No conflicts of interest were noted during preparation of this guideline.

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the [National Health Care for the Homeless Council, Inc. Web site](#).

Print copies: Available from the National Health Care for the Homeless Council, Inc., P.O. Box 60427, Nashville, TN 37206-0427; Phone: (615) 226-2292

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on May 24, 2004. The information was verified by the guideline developer on June 24, 2004.

COPYRIGHT STATEMENT

All material in this document is in the public domain and may be used and reprinted without special permission. Citation as to source, however, is appreciated. Suggested citation: Bonin E, Brammer S, Brehove T, Hale A, Hines L, Kline S, Kopydlowski MA, Misgen M, Obias ME, Olivet J, O'Sullivan A, Post P, Rabiner M, Reller C, Schulz B, Sherman P, Strehlow AJ, & Yungman J. Adapting Your Practice: Treatment and Recommendations for Homeless People with Asthma, 28 pages. Nashville: Health Care for the Homeless Clinicians' Network, National Health Care for the Homeless Council, Inc., 2003.

© 1998-2004 National Guideline Clearinghouse

Date Modified: 11/8/2004

The logo for FIRSTGOV, with "FIRST" in blue and "GOV" in red, and a small American flag icon above the "I".

